

Application No. 10/540,956
Paper Dated: February 15, 2008
In Response to the Office Action dated December 17, 2007
Attorney Docket No. 4544-051956

REMARKS

Claims 35-45 are pending in the instant Application and have been examined on their merits. Claims 1-34 have been canceled previously. In response to the Office Action of December 17, 2007, Applicants submit this Amendment together with Kanneganti *et al.* (“Overexpression of *OsiSAP8*, a member of stress associated protein (SAP) gene family of rice confers tolerance to salt, drought and cold stress in transgenic tobacco and rice,” Plant Mol. Biol.). This Amendment amends claims 44 and 45. No new matter has been added by these amendments. In view of this Amendment and the remarks submitted below, Applicants respectfully request that the rejections asserted in the Office Action be reconsidered and withdrawn, and that a Notice of Allowance be issued directed to all pending claims.

The Office Action asserts rejections under 35 U.S.C § 101 and 35 U.S.C § 103.

Rejections under 35 U.S.C. § 101

Claims 44 and 45 have been rejected under 35 U.S.C. § 101 as purportedly reciting non-statutory subject matter. Applicants have adopted the Examiner’s suggestion and amended claims 44 and 45 to recite “wherein the seeds comprise the polynucleotide sequence.” Accordingly, Applicants respectfully request that this rejection be withdrawn.

Rejection under 35 U.S.C. § 103

Claims 35-45 have been rejected under 35 U.S.C. § 103(a) as purportedly unpatentable over Mukhopadhyay *et al.* (NCBI/EMBL Database, Sequence Accession No. AF140722, June 7, 2000) in view of Hiei *et al.* (The Plant Journal (1994), 6(2), 271-282) in further view of Liu *et al.* (Eur. J. Biochem. (1999), 262, 247-257). Applicants respectfully traverse this rejection because the combination of the cited references is improper since (1) the recited gene is not a transcription factor, and (2) Liu does not teach or suggest that AN1/A20 type zinc-finger proteins are involved in stress tolerance.

A rejection under Section 103 must be supported by some reason for a skilled artisan to combine the elements in the same manner as the applicant. *KSR Int’l v. Teleflex*, 82 U.S.P.Q.2d 1385, 1397 (U.S. 2007). The reason or motivation cited cannot be based on hindsight. MPEP § 2145.

The Office Action contends that a person of ordinary skill in the art would “know” that *OsiSAP1* is a transcription factor because it contains zinc-finger motif(s). (Office Action at pages 5-6). However, as evidenced by page 15 of the Kanneganti *et al.* article, *OsiSAP1* is a cytoplasmic protein, not a transcription factor. The article specifically states that:

Generally many of the zinc finger domain proteins act as transcriptional factors. However, it was hypothesized that *OsiSAP1*, may not act as transcriptional factor since it lacks any nuclear localization signal and DNA binding domain. It was also suggested that *OsiSAP1* might carry out its function via protein-protein interactions (Mukhopadhyay *et al.* 2004).

Thus, contrary to the contentions on pages 5-6 of the Office Action, one of ordinary skill in the art would not know that *OsiSAP1* would be implicated in a plant’s response to abiotic stresses because one of ordinary skill in the art would notice that *OsiSAP1* lacks a nuclear localization sequence and a DNA binding domain, and therefore is not a transcription factor.

Additionally, on page 6, the Office Action contends that, in view of Liu *et al.*, plant transcription factors with zinc-finger motif(s) are implicated in abiotic stress tolerance in a plant. Again, according to Kanneganti *et al.*, *OsiSAP1* is not a transcription factor. Therefore, even assuming that Liu *et al.* can be extended to teach that all plant transcription factors with zinc finger motif(s) are implicated in abiotic stress tolerance in a plant, Liu *et al.*, nevertheless do not teach that cytoplasmic proteins (which are not transcription factors) having zinc-finger motif(s) are implicated in a plant’s stress tolerance.

Therefore, there is no motivation to combine Mukhopadhyay with Liu, *et al.* Mukhopadhyay only discloses a gene sequence. According to Kanneganti *et al.*, one of ordinary skill in the art would not recognize Mukhopadhyay’s gene sequence to code for a transcription factor since it lacks a nuclear localization signal or a DNA binding domain. Thus, one of ordinary skill in the art would see no reason to combine Liu *et al.*, which is purportedly directed to transcription factor genes used for manipulating plants, with Mukhopadhyay because Mukhopadhyay does not teach a transcription factor gene.

In addition, Liu *et al.* do not teach or suggest that an AN1/A20 type zinc-finger gene would be involved in stress tolerance. Not all zinc-finger proteins are transcription factors, nor are all zinc-finger genes related to stress tolerance. In fact, the claimed invention is the first AN1/A20 type zinc-finger gene linked to stress tolerance. In contrast, Liu *et al.* describe five classes of zinc-finger transcription factors, none of which is a AN1/A20 type zinc finger protein.

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In light of the array of transcription factor genes and other genes that are involved in stress tolerance, the claimed invention is patentable over the cited references because the inventors are the first to identify the specific SAP1 (AN1 and A20 type) zinc-finger gene that is involved in stress tolerance.

CONCLUSION

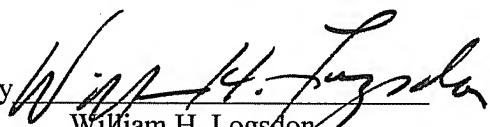
In view of the foregoing amendments and remarks, Applicants respectfully submit that all pending claims in the instant application are patentable over the cited references and are in condition for allowance. Accordingly, reconsideration, withdrawal of the rejections and a Notice of Allowance are respectfully requested.

Should the Examiner have any questions or concerns, the Examiner is invited to contact Applicants undersigned attorney by telephone at 412-471-8815.

Respectfully submitted,

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